

Smiles and Tears.

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"Science Gossip."

The month of smiles and tears, of alternating sunshine and warm rains, is upon us. The heart of Mother Earth is stirred. Vigorous growth marks every member of the vegetable kingdom, small and great. The orchestral music of the birds is swelled by new arrivals. Indeed, the tale of the latter is fairly completed before April comes to an end. They are now all on domestic cares intent. The latest arrivals are the redstart (*Phœnicura ruticilla*), known also in various parts of the kingdom as "red-tail," "firedail," "fiery brantail," &c.; the sand martin (*Hirundo riparia*); the ring ousel, reed warbler, sand piper, white throat (also known as the "nettle-creeper," from its habit), the spotted fly-catcher (or "bee-bird"), the great plover (or "stone curlew"), yellow wagtail, wood warbler (or "yellow wood wren"), goat sucker (or "fern owl"), &c. Above all, before April is over, in the Southern and Eastern Counties, we are sure to be rewarded for listening out by hearing that "melancholy bird," the night-ingle. The males arrive at least a week before the females, but gallantly forbear their song till the gentler sex reaches them. We know when that takes place by hearing the males trying a bar or two at a time of their liquid music preliminary to the fuller and sweeter song which will shortly ensue. On sunny, breezy mornings, we shall hear the "wandering voice" of the cuckoo, and be startled into delight by the sudden appearance of the first swallows skimming over the meadows and streams, as if they had not been absent through the entire winter.

April is a time of much delight to the true naturalist—that is, to a person who is sympathetically interested in the domestic doings of birds, who loves to explore the banks, hedges, and thickets for their nests and eggs (not to rob them, but to

thankfully refresh pleasant old memories which the sight thereof affords). Every delicate colour-tint, streak, and spot is the revival of an ancient joy! And what a variety is there! In the sheltered holes of trees we shall find the nests and eggs of the jackdaw, white owl, blue tit (also known as "blue cap," "Billy biter," "blue bonnet," &c.), the tree creeper, cole tit (sometimes called "cole mouse" or "cole titmouse"), nuthatch, redstart, &c. Elsewhere are hosts of other birds nesting—in tree tops, in their forks, among dense shrubs, in sheltered hedge-banks, "in the reeds by the river," on the bare, spotted pebbles of sea shores (in which case there is no nest, and the eggs marvellously resemble the pebbles), even amid floating water weeds, or in patches of decaying aquatic vegetation (the black-headed gull and dabchick, to wit). How busy the birds are! The females are having a very close time of it, but nothing could exceed the gallant attentions of their male spouses. The bird life of next year is dependent on what is now going on. In the hedges and branches of trees, the long-tailed tit (*Parus caudatus*) is making the nest which has procured for it the county name of "poke pudding" and "bottle tit," and a wondrous bit of nidal architecture it is. The moor hens and water coot are egging among the marsh reeds, the sand martin and white throat in sand pits, the starlings under the eaves of houses and on the adjacent trees (how the plumage of the latter glistens with iridescence as the strong sunlight breaks upon it!); the linnets, greenfinches, chaffinches, goldfinches, &c., in the hedgerows and bushes; the yellowhammer, pied wagtail, tree pipit, and others in the hedge banks; the skylark, chiff-chaff, meadow pipit, and others on grassy-ground generally. Each species has evolved its own kind of nesting-place, and the individuals adopt the unwritten and unchronicled command from generation to generation.

The atmosphere is loud with the various voices of birds. It is animated by their devious flights. The greening and flowering lanes are hardly less alive with the increasing "Insect multitudes." "In the gloaming," the moths are turning out in their thousands, the clouded drab moth, orange underwing, garden carpet moth, small quaker moth, early thorn, tissue moth, large yellow underwing, streamer moth, &c., are almost certain to put in an appearance during the month. The ranks of the butterflies are increased by the addition of the greater

tortoiseshell, white cabbage butterfly, green-veined white, copper butterfly, grizzle skipper, common cabbage, and the lovely orange-tip, and azure-blue butterflies. The lady-birds (immense favourites with country children, who call to them the legend about their house being on fire, and their children alone) have been sunning themselves on hot days since March began—they are getting especially numerous now. The red ants crawl from underground. The first dragon-flies begin to skim like aerial skaters above the still waters.

It is to the vegetable kingdom, however, that our attention is most strongly drawn. This is the Lord's table for the birds and beasts. On its products they feed, and the throng of uninvited guests daily becomes larger. Moreover, the plants have to think of themselves, and be protected from that utter extinction which would entail a similar result on the animal world if the latter had nothing to feed upon. Likewise they have to *flower*, to build up, endow, and protect the organs by whose means the species is perpetuated, in the keen struggle for existence. What problems and conundrums in shape and colour the opening flowers are now suggesting!

Look we everywhere, anywhere, before April is out, and these floral problems and conundrums repeat themselves. Is there no clue to their unravelling? Botanists are beginning to think there is. This difference of colour, even in species of the same genus—and, not unfrequently, in individuals of the same species, if it be a common one—is due to no mere freak or accident. It were blasphemy to think so. We all know now, how coloured flowers are related to insect visitations, for the purpose of procuring cross-fertilisation. We also know that certain kinds of insects habitually frequent certain kinds of flowers, and that different species of insects have a different colour-sense. Hence the flowers have had to respond to their guests. Even among the *Lepidoptera*, what a strong contrast there is between that of the moths and butterflies. The former have practically little or no sensation for colour—the latter possess it keenly. So the moths fly by night, or in the twilight, when no colour sense is needed, and they frequent night-opening flowers, generally light in colour, and extra sweet in perfume.

As the month draws on the flowers increase numerically; before the end they are everywhere. Many of them have won from the country people the names of the cuckoo and the

swallow—for the arrival of those common birds marked a date in Colin Clout's Calendar before printing began. On the hedges and banks the cow parsley is growing rank, in company with the stitchwort, or "break-bones," as it is also called (*Stellaria holostea*)—nobody can mistake the pretty ten-rayed, white-starred flower of the latter with its light grass-like leaves. I have known Lancashire country children (who are born interpreters of nature) to call it "milk-cans." Here also the red campion is beginning to put in an appearance. On the driest and most clayey hedge-banks, the dwarf scorpion grass, or early forget-me-not (*Myosotis collina*) will be found growing in miniature thickets. Its exquisitely lovely little turquoise-tinted flower is not bigger than a pin's head. To appreciate its beauty, examine it through one of those pocket lenses which nobody ought to be without at this time of the year, especially when taking country walks. Not far away is the more striking and never to be forgotten germander speedwell (*Veronica chamaedrys*), as blue as if it reflected a bit of the clearest sky, and was a "true image" thereof, as its Greek-derived botanical name imports. For myself, I confess, I never behold this frail and lovely blossom without a sensation of happy gladness. By the moister hedge-banks the cross-wort (*Galium cruciatum*) grows thickly, its pale yellow flowers cluster all round the verticillate leaves of the square stalk, and smell like newly-mown hay. It is a favourite with insects, as its other name of "honey-wort" well explains. The thyme-leaved speedwell (*Veronica serpyllifolia*) grows on the same hedge-bank, but its paler flowers do not make it a competitor with the germander. The wild strawberry there is now at its luxuriant best; the moister places are thronged with the scentless pale blue flower of the dog violet (*Viola canina*). There too is abundance of the lamb's lettuce (*Valerianella olitoria*) with its small pale lavender flowers—an old "pot herb" in the old days when kitchen vegetables were few. The glossy-leaved shining crane's bill (*Geranium lucidum*), with its delicately-veined pink flowers, red-stalked green leaves, will be frequently found, and always growing abundantly, on the damp hedge-banks where it occurs. Cleaver (*Galium aparine*) or "goose grass," is clambering up the hedges by means of the thousands of fish-hook like "grappling irons" on the stalks—easily seen through a lens.

The verdant fields are getting bespangled with flowers that

love richer soils. The cowslip and oxlip (*Primula veris* and *P. elatior*) in addition to increasing crowds of buttercups. Of the latter St. Mark's or St. Anthony's turnip (*Ranunculus tuberosus*) is the commonest—easy to be recognised by the turnip-like swelling of the stem, which has earned for it its popular name, as well as by the reflexed or bent-backed yellow sepals beneath the flowers. In more southerly counties that sweetest of English flowers, with its lovely rosette of exquisitely-shaped leaves, and stems with granulous roots, each as capable of producing a new plant as a seed—the meadow saxifrage—(*Saxifraga granulosa*) is abundant enough in places to whiten the meadows. The "sweeps" (as Lancashire and Yorkshire children call the dark-petalled flowers of *Luzula campestris*) is abounding everywhere. The "cuckoo flower" (*Cardamine pratensis*), also known as the "lady's smock" ("Our Lady" gave nearly as many names to early summer flowers as the "cuckoo"), with its pale lilac tints, "crowds the meadows with delight." Yet another name for it (and a good one) is the "May flower," especially known as such in the northern counties.

The wood sorrel (*Oxalis acetosella*) and blue hyacinth are abounding in the moist woods. The three-leaved saxifrage (*Saxifraga tri dactylites*) crowds old walls; the meadow orchis (Shakspeare's "Long Purples")—*Orchis morio*—in the richest soils of the richest fields gives the landscape a reddish tinge. The field madder is crowding the young cornfields; the hogweeds in the luxuriant hedgerows are providing artists with magnificent leaves for "foregrounds." The hedges are in places adorned with blossoming bird cherries; and at their bases the "wake robin," "lords and ladies," "cuckoo pint," &c. (*Arum maculatum*) grows with equally luxuriance and artistic suggestiveness. The grasses are coming into flower in the thickening fields; the sedges (easy to be recognised by their triangular stems) by the brook and stream sides.

Verily, life is worth living when it is in keen sympathy with other life—not else! The flood-tide is now rolling; the Lord's chariots are crowding the hillsides! Are there enough servants of the Prophet to behold them with unscaled eyes? If not, science comes to such with miraculously unsealing power. The scales drop off; lo, the Lord of Life is present, and we bow at His footstool!

Observations and Experiments in Education.

BY MRS. SOUTHWOOD HILL.*

No. I.—INFANCY.

The child's head rested on her arm, and his deep blue eyes were fixed upon her face, with a gaze so enquiring, and yet so confiding, that her eye fell beneath his, and her heart trembled as it would have done if some heavenly being had come under the form of childhood, and asked her to guide him pure, and more than ever exalted, through this mortal life.

"My beautiful!" said she, "why dost thou scan every lineament of my face, as if I were thy destiny, and thou wouldst read it before beginning to fulfil it? How thoughtful is thy brow, even now, and how much stronger thy will than thy power!—the eye longs for the curl that my bending head brings near thee, but the little hand knows not yet how to reach the mark. Such is the fate that must attend thee through life! Such is the difficulty of arriving at the good we see and desire, that even as I press thee to my heart, and vow myself to thy service, and picture to myself the being I would make thee, I know not the means by which thou art to become that being!"

Thus spoke the young mother; and she fell into a long reverie; and dark mists interposed themselves whenever she would have built up a system of education. At length, she

*It cannot but interest our readers to know the principles and methods laid down for her own guidance by the mother of a lady eminent in philanthropic work; and we are grateful to Mrs. Hill for the sketch she most kindly places in our hands, with the assurance that, at this day, she sees little to alter. To get at the conceptions of parental duty formed by the parents of our great and good men and women should help us infinitely in the study of Education.—ED.